

Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 2

**COMPLETE LISTING OF ALL CLAIMS, WITH MARKINGS AND STATUS IDENTIFIERS**  
(Currently amended claims showing deletions by ~~striketrough~~ and  
additions by underlining)

What is claimed is:

1 (original): A compound of formula (I),  
(R<sup>2</sup>R<sup>3</sup>) - A<sup>7</sup> - A<sup>8</sup> - A<sup>9</sup> - A<sup>10</sup> - A<sup>11</sup> - A<sup>12</sup> - A<sup>13</sup> - A<sup>14</sup> - A<sup>15</sup> - A<sup>16</sup> - A<sup>17</sup> - A<sup>18</sup> - A<sup>19</sup> - A<sup>20</sup>  
- A<sup>21</sup> - A<sup>22</sup> - A<sup>23</sup> - A<sup>24</sup> - A<sup>25</sup> - A<sup>26</sup> - A<sup>27</sup> - A<sup>28</sup> - A<sup>29</sup> - A<sup>30</sup> - A<sup>31</sup> - A<sup>32</sup> - A<sup>33</sup> - A<sup>34</sup> - A<sup>35</sup> -  
A<sup>36</sup> - A<sup>37</sup> - R<sup>1</sup> ,

(I)

wherein

A<sup>7</sup> is L-His, Ura, Paa, Pta, D-His, Tyr, 3-Pal, 4-Pal, Hppa, Tma-His, Amp or deleted, provided that when A<sup>7</sup> is Ura, Paa, Pta or Hppa then R<sup>2</sup> and R<sup>3</sup> are deleted;

A<sup>8</sup> is Ala, D-Ala, Aib, Acc, N-Me-Ala, N-Me-D-Ala, Arg or N-Me-Gly;

A<sup>9</sup> is Glu, N-Me-Glu, N-Me-Asp or Asp;

A<sup>10</sup> is Gly, Acc, Ala, D-Ala, Phe or Aib;

A<sup>11</sup> is Thr or Ser;

A<sup>12</sup> is Phe, Acc, Aic, Aib, 3-Pal, 4-Pal, β-Nal, Cha, Trp or X<sup>1</sup>-Phe;

A<sup>13</sup> is Thr or Ser;

A<sup>14</sup> is Ser, Thr, Ala or Aib;

A<sup>15</sup> is Asp, Ala, D-Asp or Glu;

A<sup>16</sup> is Val, D-Val, Acc, Aib, Leu, Ile, Tle, Nle, Abu, Ala, D-Ala, Tba or Cha;

A<sup>17</sup> is Ser, Ala, D-Ala, Aib, Acc or Thr;

A<sup>18</sup> is Ser, Ala, D-Ala, Aib, Acc or Thr;

A<sup>19</sup> is Tyr, D-Tyr, Cha, Phe, 3-Pal, 4-Pal, Acc, β-Nal, Amp or X<sup>1</sup>-Phe;

A<sup>20</sup> is Leu, Ala, Acc, Aib, Nle, Ile, Cha, Tle, Val, Phe or X<sup>1</sup>-Phe;

A<sup>21</sup> is Glu, Ala or Asp;

A<sup>22</sup> is Gly, Acc, Ala, D-Ala, β-Ala or Aib;

A<sup>23</sup> is Gln, Asp, Ala, D-Ala, Aib, Acc, Asn or Glu;

Inventor : Dong, Zheng Xin et al.  
 Serial No. : 09/856,676  
 Filed : July 16, 2001  
 Page : 3

A<sup>24</sup> is Ala, Aib, Val, Abu, Tle or Acc;

A<sup>25</sup> is Ala, Aib, Val, Abu, Tle, Acc, Lys, Arg, hArg, Orn,  
 HN-CH((CH<sub>2</sub>)<sub>n</sub>-NR<sup>10</sup>R<sup>11</sup>)-C(O) or HN-CH((CH<sub>2</sub>)<sub>e</sub>-X<sup>3</sup>)-C(O);

A<sup>26</sup> is Lys, Ala, 3-Pal, 4-Pal, Arg, hArg, Orn, Amp,  
 HN-CH((CH<sub>2</sub>)<sub>n</sub>-NR<sup>10</sup>R<sup>11</sup>)-C(O) or HN-CH((CH<sub>2</sub>)<sub>e</sub>-X<sup>3</sup>)-C(O);

A<sup>27</sup> is Glu, Ala, D-Ala or Asp;

A<sup>28</sup> is Phe, Ala, Pal, β-Nal, X<sup>1</sup>-Phe, Aic, Acc, Aib, Cha or  
 Trp;

A<sup>29</sup> is Ile, Acc, Aib, Leu, Nle, Cha, Tle, Val, Abu, Ala, Tba  
 or Phe;

A<sup>30</sup> is Ala, Aib, Acc or deleted;

A<sup>31</sup> is Trp, Ala, β-Nal, 3-Pal, 4-Pal, Phe, Acc, Aib, Cha, Amp  
 or deleted;

A<sup>32</sup> is Leu, Ala, Acc, Aib, Nle, Ile, Cha, Tle, Phe, X<sup>1</sup>-Phe,  
 Ala or deleted;

A<sup>33</sup> is Val, Acc, Aib, Leu, Ile, Tle, Nle, Cha, Ala, Phe, Abu,  
 X<sup>1</sup>-Phe, Tba, Gaba or deleted;

A<sup>34</sup> is Lys, Arg, hArg, Orn, Amp, Gaba,  
 HN-CH((CH<sub>2</sub>)<sub>n</sub>-NR<sup>10</sup>R<sup>11</sup>)-C(O), HN-CH((CH<sub>2</sub>)<sub>e</sub>-X<sup>3</sup>)-C(O) or deleted;

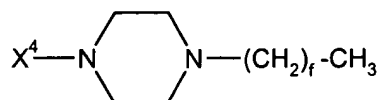
A<sup>35</sup> is Gly or deleted;

A<sup>36</sup> is L- or D-Arg, D- or L-Lys, D- or L-hArg, D- or L-Orn,  
 Amp, HN-CH((CH<sub>2</sub>)<sub>n</sub>-NR<sup>10</sup>R<sup>11</sup>)-C(O), HN-CH((CH<sub>2</sub>)<sub>e</sub>-X<sup>3</sup>)-C(O) or  
 deleted;

A<sup>37</sup> is Gly or deleted;

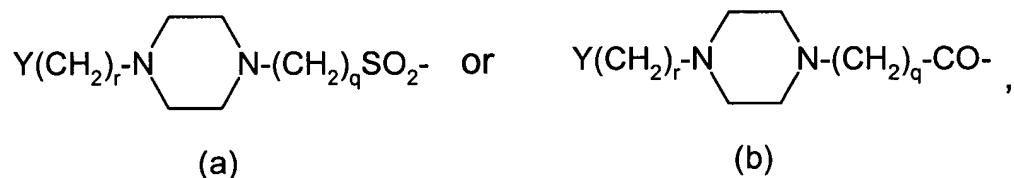
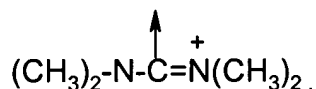
X<sup>1</sup> for each occurrence is independently selected from  
 the group consisting of (C<sub>1</sub>-C<sub>6</sub>)alkyl, OH and halo;

R<sup>1</sup> is OH, NH<sub>2</sub>, (C<sub>1</sub>-C<sub>12</sub>)alkoxy, or NH-X<sup>2</sup>-CH<sub>2</sub>-Z, wherein X<sup>2</sup>  
 is a (C<sub>1</sub>-C<sub>12</sub>)hydrocarbon moiety, and Z is H, OH, CO<sub>2</sub>H or  
 CONH<sub>2</sub>;

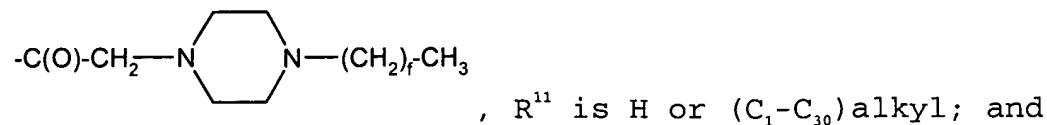
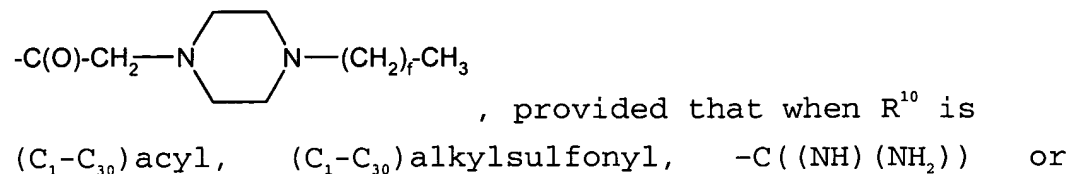


X<sup>3</sup> is or -C(O)-NHR<sup>12</sup>, wherein X<sup>4</sup> for  
 each occurrence is independently -C(O)-, -NH-C(O)- or  
 -CH<sub>2</sub>-, and f for each occurrence is independently an  
 integer from 1 to 29;

each of R<sup>2</sup> and R<sup>3</sup> is independently selected from the group consisting of H, (C<sub>1</sub>-C<sub>30</sub>)alkyl, (C<sub>2</sub>-C<sub>30</sub>)alkenyl, phenyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, naphthyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, hydroxy(C<sub>1</sub>-C<sub>30</sub>)alkyl, hydroxy(C<sub>2</sub>-C<sub>30</sub>)alkenyl, hydroxyphenyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, and hydroxynaphthyl(C<sub>1</sub>-C<sub>30</sub>)alkyl; or one of R<sup>2</sup> and R<sup>3</sup> is C(O)X<sup>5</sup> in which X<sup>5</sup> is (C<sub>1</sub>-C<sub>30</sub>)alkyl, (C<sub>2</sub>-C<sub>30</sub>)alkenyl, phenyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, naphthyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, hydroxy(C<sub>1</sub>-C<sub>30</sub>)alkyl, hydroxy(C<sub>2</sub>-C<sub>30</sub>)alkenyl, hydroxyphenyl(C<sub>1</sub>-C<sub>30</sub>)alkyl, hydroxynaphthyl(C<sub>1</sub>-C<sub>30</sub>)alkyl,



where Y is H or OH, r is 0 to 4 and q is 0 to 4;  
 e for each occurrence is independently an integer from 1 to 4;  
 n for each occurrence is independently an integer from 1-5; and  
 R<sup>10</sup> and R<sup>11</sup> for each occurrence is each independently H, (C<sub>1</sub>-C<sub>30</sub>)alkyl, (C<sub>1</sub>-C<sub>30</sub>)acyl, (C<sub>1</sub>-C<sub>30</sub>)alkylsulfonyl, -C((NH)(NH<sub>2</sub>)) or



R<sup>12</sup> is (C<sub>1</sub>-C<sub>30</sub>)alkyl;

with the proviso that:

(i) at least one amino acid of a compound of formula (I) is not the same as the native sequence of hGLP-1(7-36, or

Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 5

-37)NH<sub>2</sub> (SEQ ID NOS: 1, 2) or hGLP-1(7-36, or -37)OH (SEQ ID NOS: 3, 4);

(ii) a compound of formula (I) is not an analogue of hGLP-1(7-36, or -37)NH<sub>2</sub> (SEQ ID NOS: 1,2) or hGLP-1(7-36, or -37)OH (SEQ ID NOS: 3, 4) wherein a single position has been substituted by Ala;

(iii) a compound of formula (I) is not [Lys<sup>26</sup>(N<sup>E</sup>-alkanoyl)]hGLP-1(7-36, or -37)-E (SEQ ID NOS: 5-8), [Lys<sup>34</sup>(N<sup>E</sup>-alkanoyl)]hGLP-1(7-36, or -37)-E (SEQ ID NOS: 9-12), [Lys<sup>26,34</sup>-bis(N<sup>E</sup>-alkanoyl)]hGLP-1(7-36, or -37)-E (SEQ ID NOS: 13-16), [Arg<sup>26</sup>, Lys<sup>34</sup>(N<sup>E</sup>-alkanoyl)]hGLP-1(8-36, or -37)-E (SEQ ID NOS: 17-20), or [Arg<sup>26,34</sup>, Lys<sup>36</sup>(N<sup>E</sup>-alkanoyl)]hGLP-1(7-36, or -37)-E, wherein E is -OH or -NH<sub>2</sub> (SEQ ID NOS: 21-24);

(iv) a compound of formula (I) is not Z-hGLP-1(7-36, or -37)-OH, Z-hGLP-1(7-36, or -37)-NH<sub>2</sub>, where Z is selected from the group consisting of

(a) [Arg<sup>26</sup>] (SEQ ID NOS: 25-28), [Arg<sup>34</sup>] (SEQ ID NOS: 29-32), [Arg<sup>26,34</sup>] (SEQ ID NOS: 33-36), [Lys<sup>36</sup>], [Arg<sup>26</sup>, Lys<sup>36</sup>] (SEQ ID NOS: 41-44), [Arg<sup>34</sup>, Lys<sup>36</sup>] (SEQ ID NOS: 45-46), [D-Lys<sup>36</sup>], [Arg<sup>36</sup>] (SEQ ID NOS: 37-40), [D-Arg<sup>36</sup>] (SEQ ID NOS: 3, 4, 1, 2), [Arg<sup>26,34</sup>, Lys<sup>36</sup>] (SEQ ID NOS: 49-52) or [Arg<sup>26,36</sup>, Lys<sup>34</sup>] (SEQ ID NOS: 25-28);

(b) [Asp<sup>21</sup>] (SEQ ID NOS: 53-56);

(c) at least one of [Aib<sup>8</sup>] (SEQ ID NOS: 57-60), [D-Ala<sup>8</sup>] and [Asp<sup>9</sup>] (SEQ ID NOS: 61-64); and

(d) [Tyr<sup>7</sup>] (SEQ ID NOS: 65-68), [N-acyl-His<sup>7</sup>] (SEQ ID NOS: 69-72), [N-alkyl-His<sup>7</sup>] (SEQ ID NOS: 73-76), [N-acyl-D-His<sup>7</sup>] or [N-alkyl-D-His<sup>7</sup>];

(v) a compound of formula (I) is not a combination of any two of the substitutions listed in groups (a) to (d); and

(vi) a compound of formula (I) is not [N-Me-Ala<sup>8</sup>]hGLP-1(8-36 or -37) (SEQ ID NOS: 77, 78), [Glu<sup>15</sup>]hGLP-1(7-36 or -37) (SEQ ID NOS: 79, 80), [Asp<sup>21</sup>]hGLP-1(7-36 or -37) (SEQ ID NOS: 53, 54) or [Phe<sup>31</sup>]hGLP-1(7-36 or -37) (SEQ ID NOS: 81, 82).

Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 6

2 (original): A compound according to claim 1 or a pharmaceutically acceptable salt thereof wherein A<sup>11</sup> is Thr; A<sup>13</sup> is Thr; A<sup>14</sup> is Ser, Aib or Ala; A<sup>17</sup> is Ser, Ala, Aib or

D-Ala; A<sup>18</sup> is Ser, Ala, Aib or D-Ala; A<sup>21</sup> is Glu or Ala; A<sup>23</sup> is Gln, Glu, or Ala; and A<sup>27</sup> is Glu or Ala.

3 (original): A compound according to claim 2 or a pharmaceutically acceptable salt thereof wherein A<sup>9</sup> is Glu, N-Me-Glu or N-Me-Asp; A<sup>12</sup> is Phe, Acc or Aic; A<sup>16</sup> is Val, D-Val, Acc, Aib, Ala, Tle or D-Ala; A<sup>19</sup> is Tyr, 3-Pal, 4-Pal or D-Tyr; A<sup>20</sup> is Leu, Acc, Cha, Ala or Tle; A<sup>24</sup> is Ala, Aib or Acc; A<sup>25</sup> is Ala, Aib, Acc, Lys, Arg, hArg, Orn,

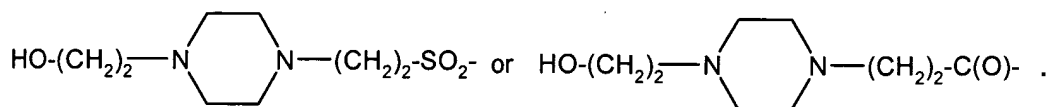
HN-CH((CH<sub>2</sub>)<sub>n</sub>-NH-R<sup>10</sup>)-C(O); A<sup>28</sup> is Phe or Ala; A<sup>29</sup> is Ile, Acc or Tle; A<sup>30</sup> is Ala, Aib or deleted; A<sup>31</sup> is Trp, Ala,

3-Pal, 4-Pal or deleted; A<sup>32</sup> is Leu, Acc, Cha, Ala or deleted; A<sup>33</sup> is Val, Acc, Ala, Gaba, Tle or deleted.

4 (original): A compound according to claim 3 or a pharmaceutically acceptable salt thereof wherein A<sup>8</sup> is Ala, D-Ala, Aib, A6c, A5c, N-Me-Ala, N-Me-D-Ala or N-Me-Gly; A<sup>10</sup> is Gly, Ala, D-Ala or Phe; A<sup>12</sup> is Phe, A6c or A5c; A<sup>16</sup> is Val, Ala, Tle, A6c, A5c or D-Val; A<sup>20</sup> is Leu, A6c, A5c, Cha, Ala or Tle; A<sup>22</sup> is Gly, Aib, β-Ala, L-Ala or D-Ala; A<sup>24</sup> is Ala or Aib; A<sup>29</sup> is Ile, A6c, A5c or Tle; A<sup>32</sup> is Leu, A6c, A5c, Cha, Ala or deleted; A<sup>33</sup> is Val, A6c, A5c, Ala, Gaba, Tle or deleted.

5 (original): A compound according to claim 4 or a pharmaceutically acceptable salt thereof wherein R<sup>1</sup> is OH or NH<sub>2</sub>.

6 (original): A compound according to claim 5 or a pharmaceutically acceptable salt thereof wherein R<sup>2</sup> is H and R<sup>3</sup> is (C<sub>1</sub>-C<sub>30</sub>)alkyl, (C<sub>2</sub>-C<sub>30</sub>)alkenyl, (C<sub>1</sub>-C<sub>30</sub>)acyl,



Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 7

7 (original): A compound according to claim 1  
wherein said compound is

[D-Ala<sup>8</sup>, Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]-GLP-1(7-34)NH<sub>2</sub>;  
[D-Ala<sup>8,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub>;  
[Ala<sup>18,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 83);  
[Ala<sup>16,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 84);  
[Ala<sup>14,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 85);  
[Ala<sup>22,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 86);  
[Hppa<sup>7</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 87);  
[Ala<sup>15,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 88);  
[Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-35)-NH<sub>2</sub> (SEQ ID NO: 89);  
[Ala<sup>22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 90);  
[Ala<sup>15,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 91);  
[Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 92);  
[Ala<sup>18,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 93);  
[Ala<sup>21,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 94);  
[Ala<sup>22,23,26,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 95);  
[Ala<sup>22,23,27,32</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 96);  
[Ala<sup>22,23,26,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 97);  
[Ala<sup>22,23,27,31</sup>, 3-Pal<sup>19</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 98);  
[Ala<sup>22,23,27,28</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 99);  
[Ala<sup>22,23,27,29</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 100);  
[Ala<sup>23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 101);  
[Ala<sup>20,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO:  
102);  
[Ala<sup>22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 103);  
[Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO:  
104);  
[D-Ala<sup>10</sup>, Ala<sup>22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>33</sup>]hGLP-1(7-33)-NH<sub>2</sub>;  
[D-Ala<sup>8</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[Ala<sup>17,23,27</sup>, 3-Pal<sup>19,26,31</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 105);  
[D-Ala<sup>8</sup>, Ala<sup>17</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO: 106);  
[D-Ala<sup>8</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Tle<sup>29</sup>]hGLP-1(7-34)-NH<sub>2</sub>;

Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 8

[D-Ala<sup>8</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Tle<sup>16</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[D-Ala<sup>8</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[D-Ala<sup>22</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[Aib<sup>8</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO:  
107);  
[D-Ala<sup>8</sup>, Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-33)-NH<sub>2</sub>;  
[Aib<sup>8</sup>, Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO: 108);  
[Ala<sup>17,18,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO:  
109);  
[Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Tle<sup>33</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO:  
110);  
[Tle<sup>16</sup>, Ala<sup>17,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID NO:  
111);  
[N-Me-D-Ala<sup>8</sup>, Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-33)-NH<sub>2</sub>;  
[Aib<sup>8</sup>, Ala<sup>17,18,22,23,27</sup>, 3-Pal<sup>19,31</sup>]hGLP-1(7-33)-NH<sub>2</sub> (SEQ ID NO:  
112);  
[Ala<sup>17,18,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Tle<sup>16,20</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub> (SEQ ID  
NO: 113);  
[D-Ala<sup>8</sup>, Ala<sup>17,18,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Tle<sup>16</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[D-Ala<sup>8,22</sup>, Ala<sup>17,18,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[D-Ala<sup>8,18</sup>, Ala<sup>17,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>;  
[D-Ala<sup>8,17</sup>, Ala<sup>18,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>; or  
[D-Ala<sup>8</sup>, Ala<sup>17,18,22,23,27</sup>, 3-Pal<sup>19,31</sup>, Gaba<sup>34</sup>]hGLP-1(7-34)-NH<sub>2</sub>; or a  
pharmaceutically acceptable salt thereof.

8 (original): A compound according to claim 1  
wherein said compound is

[Aib<sup>8</sup>, A6c<sup>32</sup>]hGLP-1(7-36)NH<sub>2</sub> (SEQ ID NO: 114);  
[A6c<sup>20,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 115);  
[Aib<sup>8</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 116);  
[(Tma-His)<sup>7</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 117);  
[A6c<sup>8</sup>]hGLP-1(8-36)-NH<sub>2</sub> (SEQ ID NO: 118);  
[A6c<sup>8</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 119);  
[A6c<sup>16,20</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 120);  
[A6c<sup>29,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 121);  
[A6c<sup>20</sup>, Aib<sup>24</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 122);

Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 9

[Aib<sup>24</sup>, A6c<sup>29,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 123);  
[A6c<sup>16,29,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 124);  
[Ura<sup>7</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 125);  
[Paa<sup>7</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 126);  
[Pta<sup>7</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 127);  
[N-Me-Ala<sup>8</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 128);  
[N-Me-D-Ala<sup>8</sup>]hGLP-1(7-36)-NH<sub>2</sub>;  
[N-Me-D-Ala<sup>8</sup>]hGLP-1(8-36)-NH<sub>2</sub>;  
[N-Me-Gly<sup>8</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 129);  
[A5c<sup>8</sup>]hGLP-1(7-36) (SEQ ID NO: 130) ;  
[N-Me-Glu<sup>9</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 131);  
[A5c<sup>8</sup>, A6c<sup>20,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 132);  
[Aib<sup>8</sup>, A6c<sup>32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 133);  
[Aib<sup>8,25</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 134);  
[Aib<sup>8,24</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 135);  
[Aib<sup>8,30</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 136);  
[Aib<sup>8</sup>, Cha<sup>20</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 137);  
[Aib<sup>8</sup>, Cha<sup>32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 138);  
[Aib<sup>8</sup>, Glu<sup>23</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 139);  
[Aib<sup>8</sup>, A6c<sup>20</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 140);  
[Aib<sup>8</sup>, A6c<sup>20,32</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 141);  
[Aib<sup>8,22</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 142);  
[Aib<sup>8</sup>, β-Ala<sup>22</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 143);  
[Aib<sup>8</sup>, Lys<sup>25</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 144);  
[Aib<sup>8</sup>, A6c<sup>12</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 145);  
[Aib<sup>8</sup>, A6c<sup>29</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 146);  
[Aib<sup>8</sup>, A6c<sup>33</sup>]hGLP-1(7-36)-NH<sub>2</sub> (SEQ ID NO: 147);  
[Aib<sup>8,14</sup>]hGLP-1(7-36)NH<sub>2</sub> (SEQ ID NO: 148);  
[Aib<sup>8,18</sup>]hGLP-1(7-36)NH<sub>2</sub> (SEQ ID NO: 149); or  
[Aib<sup>8,17</sup>]hGLP-1(7-36)NH<sub>2</sub> (SEQ ID NO: 150); or a  
pharmaceutically acceptable salt thereof.

9 (original): A pharmaceutical composition  
comprising an effective amount of a compound according to



Inventor : Dong, Zheng Xin et al.  
Serial No. : 09/856,676  
Filed : July 16, 2001  
Page : 10

claim 1 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier or diluent.

10 (withdrawn): A method of eliciting an agonist effect from a GLP-1 receptor in a subject in need thereof which comprises administering to said subject an effective amount of a compound according to claim 1 or a pharmaceutically acceptable salt thereof.

11 (withdrawn): A method of treating a disease selected from the group consisting of Type I diabetes, Type II diabetes, obesity, glucagonomas, secretory disorders of the airway, metabolic disorder, arthritis, osteoporosis, central nervous system disease, restenosis, neurodegenerative disease, renal failure, congestive heart failure, nephrotic syndrome, cirrhosis, pulmonary edema, and hypertension, in a subject in need thereof which comprises administering to said subject an effective amount of a compound according to claim 1 or a pharmaceutically acceptable salt thereof.

12 (withdrawn): A method according to claim 11 wherein said disease is Type I diabetes or Type II diabetes.